UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,819	09/08/2003	Zeev Smilansky	27455	2876

7590 12/11/2006

Martin D. Moynihan
PRTSI, Inc.
P. O. Box 16446
Arlington, VA 22215

EXAMINER	
BITAR, NANCY	

ART UNIT	PAPER NUMBER
2624	

DATE MAILED: 12/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/658,819	SMILANSKY, ZEEV	
	Examiner	Art Unit	
	Nancy Bitar	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 November 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2 and 4-48* is/are pending in the application.

4a) Of the above claim(s) *1 and 3* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2 and 4-48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 September 2003* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/26/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTIONC

The amendment filed on 11/07/2006 has been entered and may of record.

Claims 1 and 3 are cancelled

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. Claims 5-6 recite the limitation "said image processing means" in line 1. There is insufficient antecedent basis for this limitation in the claim. Is it the processor that is associated with said camera or the image processing detection process? Appropriate correction is required.

Claim Rejections - 35 USC ∋ 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2,4-7,18-26,37-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hanko et al (U.S. Patent 6,493,041), and Tumer et al(US Patent 2004/0017224)

As to independent claim 43, Hanko et al teaches a digital camera for producing an image of a scene (video camera 110); and a processor (130) associated with said camera (110), said processor adapted to run at least a dynamic range control process and an image processing detection process. Hanko et al teaches the invention is implemented with appliances and electronic devices using embedded processors and controllers and LCD but Hanko fails to teach fails to specifically teach said dynamic range control process being adapted to communicate with said detection process for adapting the detection process to changed dynamic range settings of the camera. Specifically, Tumer et al et al. teaches an image processor including a circuit component that control the dynamic range to be adjustable and switchable thus getting more accurate and faster output (paragraph [0075]). Because the dynamic range control process helps in obtaining the best resolution possible for the combined detector-readout system (see Tumer et al; paragraph [0017]) . It would have been obvious to one of ordinary skill in the art to use the DRC in Hanko et al controller in order to improve the overall look to be more precise and critical. Therefore, the claimed invention would have been obvious to one of ordinary skill in the art at the time of the invention by applicant.

As to dependent claim 44, Hanko et al teaches the apparatus of claim 43, wherein the image processing detection process (an apparatus for detecting motion in

video 110, column 5, lines 50-52) is configured to determine an initial parametric representation of the scene and to continuously update said parametric representation (each pixel location in an image is accurately and repeatable measured and a "value" is assigned to each pixel, column 5, lines 60-65) to slow changes in the scene (making the device to detect very slow moving objects, column 7, lines 17-25)

As to claims 5 and 6,Tumer et al teaches the apparatus of claim 43, wherein said image processing means comprises a DSP and a FPGA (the image processing includes DSP chips, paragraph [0234] and external controller FPGA, paragraph [0022]).

As to claim 45, Hank et al teaches the apparatus of claim 44,wherein said slow changes include changes in illumination (In a video motion detection system it is important that changes in lighting are not confused with motion, column 7, lines 16-25).

As to claim 46, Hanko et al teaches the apparatus of claim 43, wherein the processor(130) is configured to: determine an initial parametric representation of said scene (current reference frame,144) and update said parametric representation according to predefined criteria (new reference frame selector, 170, column8, lines 61-67); analyze pixels of said image so as to determine which of said pixels are hot pixels according to predefined criteria(motion detector 180 analyses the current frame to determine whether motion has occurred, column 8, lines 39-50 , in figure 4 step 425 determination is made whether the pixel difference is significant);define at least one target from said hot pixels; measure predefined parameters for at least one of said at least one target ;and determine for at least one of said at least one target whether said

target is of interest according to application specific criteria (a pixel difference counter that counts the number of significantly different pixels of the current frame is incremented at step 430).

As to claim 2, Hanko et al. teaches the apparatus of claim 46, wherein the processor is configured to track at least one of said at least one target, by measuring motion parameters of said target (motion detector 180 analyses the current frame to determine whether motion has occurred, column 8, lines 50-60).

As to claim 4, While Hanko et al meets a number of the limitations of the claimed invention, as pointed out more fully above, Hanko et al. teaches a digital and analog technique using a microprocessor (column 12, lines 15-20) but fails to specifically teach the digital camera is a CMOS type. Specifically, Tumer et al. teaches the use of (standard CMOS technology with good design practice, no special rad-hard technology is used, paragraph [0116]). Because the CMOS type camera of Tumer et al helps in raising the count by almost six million pixels and provide ISO sensitivity and fasten the shooting with a large and improved buffer it would have been obvious to one of ordinary skill in the art to use the CMOS technology of Tumer in Hanko et al in order to improve the radiation tolerance. Therefore, the claimed invention would have been obvious to one of ordinary skill in the art at the time of the invention by applicant.

As to claim 7, Hanko et al teaches the apparatus of claim 46, where the processor is configured to compute said initial parametric representation from a plurality

of acquired images (same difference value threshold is applicable to a plurality of adjacent image elements of said first incoming video frame, column 14, lines 5-7).

As to claim 22,Hanko et al teaches the apparatus of claim 2, the processor is configured to match target with the same target in a previously captured image (pixel differencer 150 compares the difference between incoming and reference pixels against a constant threshold, figure1).

As to claim 47 and 48, Hanko et al teaches the apparatus of claim 43,where in digital camera has a frame size the order 1800 pixels and the image processing detection process is updates to process 1 frame per second and is adapted to process less that 30 million pixels per second (described as operating on pixels of an image frame, the invention may operate on other image elements, such as, for example, groups of pixels, column 12, lines 20-36)

As to claim 18,Hanko et al teaches the apparatus of claim 46, wherein the processor is configured to define at least one target comprises means for segmenting said hot pixels into connected components (image understanding techniques automatically segment a video image into regions of pixels that correspond to objects in a video camera's field of view, column 2, lines 22-30).

As to claim 19,Hanko et al teaches the apparatus of claim 46, the processor is configured to count the hot pixels in said target (difference counter, 165, Hanko et al, note that the difference counter keeps a count of the number of pixels for each frame

that are significantly different from the corresponding pixels in the current reference frame, column 8, lines 41-45, column 10, lines 1-8).

As to claim 20, Hanko et al teaches the apparatus of claim 46, wherein the processor is configured to compute a rectangle circumscribing said target (The incoming image is divided up into rectangles, typically N x M rectangle, column 2, lines 31-44).

As to claim 21, Hanko et al. teaches the apparatus of claim 46, wherein the processor is configured to analyze said measured predefined parameters according to said application-specific criteria (motion detector180 analyses the current frame to determine whether motion has occurred, column 8, lines 50-60).

As to claim 22 and 23, Hanko et al teaches the apparatus of claim 2,wherein said means for measuring motion parameters comprises means for matching said target with the same target in a previously captured image (pixel differencer 150 compares the difference between incoming and reference pixels against a constant threshold, figure1).

Claims 24-26,38-42 differ from claim 2,4-7,18-48 only in that claims 24-26,38-42 are method claim whereas, claim 2,4-7,18-48 are an apparatus claim. Thus, claims 24-26,38-42 are analyzed as previously discussed with respect to claims 2,4-7,18-48 above.

Allowable Subject Matter

4. Claims 8-17 and 27-36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Stafsudd et al (US 2002/0176605) Is cited to teach illuminator operating in the visible or near-infrared waveband, one or more imagers, each placed behind an e.g. fixed-focus optical lens and a band pass filter, and a microprocessor. The microprocessor runs the software that operates the illuminator and the imagers, and processes the data collected from the imagers to produce the ranging information.

Owechko et al (US 6,801,662) Is cited to teach a vision-based system for automatically detecting the type of object within a specified area, such as the type of occupant within a vehicle. Determination of the type of occupant can then be used to determine whether an airbag deployment system should be enabled or not

Pomerleau et al (US 5,091,780) Is cited to teach The security system also has a device for processing the images to determine whether the area is in a desired state or an undesired state. The processing device is trainable to learn the difference between the desired state and the undesired state. The monitoring device includes a video

camera, which produces video images of the area, and the processing device includes a computer simulating a neural network.

Abbott et al (US 5,999,634) Is cited to teach analyzing electronic image signals are provided which include processing the image signal as one or more cells, each comprising a plurality of pixels. For consecutive frames of the monitored image, a set of pointers are generated, each containing a value related to the detail contents of the image. The pointers are used to address a memory array, each pointer corresponding to a row in the memory array and the content of each pointer pointing to a memory element in the corresponding row. For successive frames, the value of each memory element addressed by a pointer is updated.

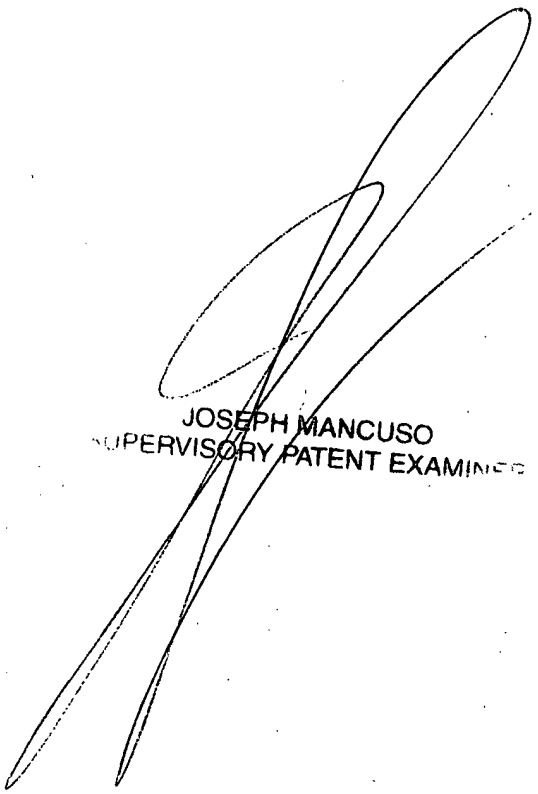
Inquiries

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nancy Bitar whose telephone number is 571-270-1041. The examiner can normally be reached on Mon-Fri (7:30a.m. to 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on 571-272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nancy Bitar 12/01/2006


JOSEPH MANCUSO
SUPERVISORY PATENT EXAMINER